

**REMARKS/ARGUMENTS**

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 4-21 are presently active; Claims 1-3 having been previously canceled without prejudice; and Claims 16-21 having been added by way of the present amendment. No new matter has been added.

In the outstanding Office Action, Claims 4, 6-8, 14, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Arami et al (U.S. Pat. No. 5,904,872) in view of Toya et al (U.S. Pat. No. 6,407,371). Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Arami et al and Toya et al and further in view of Goela et al (U.S. Pat. No. 5,612,132). Claims 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Arami et al in view of Saito et al (U.S. Pat. No. 6,369,361). Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito et al in view of Arami et al.

**Claim Amendments:** Claims 16-21 have been added in order to more clearly define the subject matter of the present invention. The newly added claims 16-21 are supported by page 13 lines 15-19, page 15 lines 14-16, page 22 lines 20-22 and page 26 lines 19-23 and therefore do not constitute new matter.

**Regarding the art rejection based on Arami et al and Toya et al,** M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be shown in as complete detail as is contained in the claim. M.P.E.P. § 2143.03 requires, to establish a case of *prima facie* obviousness, all the claim limitations must be taught or suggested by the prior art.

Claims 4 and 6 define a mounting table includes a heating unit having a reflector plate made of opaque quartz, and define a quartz tube *welded to a surface of the reflector*

*plate*. The Office Action acknowledges that Arami et al do not teach a quartz tube welded to a surface of the reflector plate. See Office Action, page 3, lines 8-10. The Office Action thereafter contends that Toya et al teaches a quartz tube welded to a surface of the reflector plate in Figures 13 and 14.

However, Toya et al do not disclose or even suggest in Figs. 13 or 14 or elsewhere that a quartz tube is welded to a surface of a reflector plate. The examiner has not identified any component of Toya et al that the Office considers to be a reflector plate.

Fig. 13 of Toya et al only shows that a carbon wire 2 is accommodated in a hairpin-shaped groove 32a in a flat quartz glass plate and then, the flat quartz glass plate 32a is fused with another flat quartz glass plate 32b. Neither surface of glass plate 32a or 32b could be considered a surface of a reflector plate. The quartz plates 32a and 32b are not reflective but rather are understood to be transparent in order for the light flux of the heated carbon wire to heat an external object.

Fig. 13 of Toya et al only shows tubular stock material. There is no disclosure or suggestion here of a quartz tube welded to a surface of a reflector plate.

Accordingly, Applicants submit that neither Arami et al nor Toya et al (individually or in combination) disclose or suggest a quartz tube welded to a surface of a reflector plate. Hence, it is respectfully submitted that independent Claims 4 and 6 (and the claims dependent therefrom) patentably define over Arami et al and Toya et al, and are therefore allowable.

Moreover, Claims 5, 7, 8, 14 and 15, depending on Claim 4 or 6 are allowable for the same reason indicated with respect to Claim 4 or 6, respectively, and further because of the additional features recited therein which, when taken alone and/or in combination with the features recited in Claim 4 or 6, remove the defined inventions further from the disclosures made in the cited references.

**Regarding the art rejection based on Saito et al**, Claim 9 is directed to a heat treatment apparatus. In particular, the heat treatment apparatus includes *a processing chamber*, an inner vessel and a heating unit. The heating unit is installed between the inner vessel and an inner wall of the processing chamber, for heating the inner vessel and, *the heating unit includes a reflector plate* made of opaque quartz, and a quartz tube welded to a surface of the reflector plate. That is, the processing chamber is a distinct element from the reflector plate.

By including the reflector plate distinct from the processing chamber, the heat rays generated from the heating unit are reflected with high reflectivity.

Saito et al are totally silent on a reflector plate distinct from the processing chamber. The outstanding Office Action asserts that the reference numeral 3 of Figs. 1-3 of Saito et al corresponds to a reflector plate. However, the element in Saito et al designated by reference numeral 3 is **not** a reflector plate, but rather is a processing chamber. Hence, even if the processing chamber were argued by the examiner to be a reflector plate, it would not be a reflector plate distinct from the processing chamber. See Figs. 1-3 of Saito. Accordingly, Saito et al do not disclose or even suggest a heating unit installed between the inner vessel and an inner wall of the processing chamber, with the heating unit including 1) a reflector plate made of opaque quartz, and 2) a quartz tube welded to a surface of the reflector plate, as defined in Claim 9.

The deficiencies in Saito et al are not overcome by Arami et al. Accordingly, Applicants submit that neither Saito et al nor Arami et al (individually or in combination) disclose or suggest the above-noted heating unit configuration. Hence, it is respectfully submitted that independent Claim 9 (and the claims dependent therefrom) patentably define over Saito et al and Arami et al, and are therefore allowable.

It is also believed that Claims 10-13, depending on Claim 9 are allowable for the same reason indicated with respect to Claim 9, respectively, and further because of the additional features recited therein which, when taken alone and/or in combination with the features recited in Claim 9, remove the defined inventions defined further from the disclosures made in the cited references.

**Newly Added Claims**

Dependent Claims 16-21 have been added in order to more clearly define the subject matter of the present invention without adding any new matter.

Applicants believes that none of the features defined in the newly added claims 16-21 are disclosed or suggested in the cited references. The examiner's full consideration of these claims is requested.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

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